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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of	:	Confirmation No. 2074
Jacques PERNOT, ET AL.	:	Group Art Unit 3732
Application No. 10/580,373	:	Examiner: John J. Wilson
Filing Date: May 23, 2006	:	(571) 272-4722
For a Patent for a	:	
DENTAL HANDPIECE WITH A UNITARY BODY AND AN ELECTRICALLY CONDUCTIVE AND ELASTIC CONNECTION ELEMENT (AS AMENDED)	:	October 27, 2008

APPEAL BRIEF

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Sir:

This Brief is being filed in support of an appeal to the Board of Patent Appeals and Interferences from the Examiner's final rejection of claims 33 to 65 in the Office Action mailed November 28, 2007.

A single copy of the Appeal Brief is being submitted (Section 1205.02, Manual of Patent Examining Procedure), and the fee ($ 270.00) set forth in 37 C.F.R. §41.20(b)(2) is submitted herewith.

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INTRODUCTION

The present U.S. Patent Application, No. 10/580,373, constitutes the national stage of an International Application, No. PCT/FR2004/002392. Documents for entering the national stage of the International Application were submitted on May 23, 2006, pursuant to 35 U.S.C. §371.

U.S. Patent Application No. 10/580,373 originally included 32 claims, which were presented as a literal English language translation of the 32 French-text claims presented in International Application No. PCT/FR2004/002392.

A first Office Action issued on April 10, 2007. The specification was objected to because the Abstract was considered to be too long. Section headings were also suggested for the specification. Claims 8 to 12 and 14 to 32 were objected to under 37 C.F.R. §1.75(c), for being in improper multiple dependent form, and claim 4 was rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,011,408 (Nakanishi). Claims 2 to 7 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over various proposed combinations of Nakanishi with U.S. Patent No. 7,074,041 (Kuhn), U.S. Patent No. 274,008 (Lincoln), U.S. Patent No. 6,149,430 (Nemetz et al.) and U.S. Patent Application Publication No. 2002/0168610 (Papanek et al.).

A "Reply to Office Action Mailed April 10, 2007" was filed on October 10, 2007, which amended the title, and which submitted an amended abstract and substitute specification for replacing the literal English translations of the abstract and specification which were submitted for International Application No. PCT/FR2004/002392. Originally submitted claims 1 to 32 were canceled and replaced with newly presented claims 33 to 65.

A second Office Action was issued on November 28, 2007, which finally rejected pending claims 33 to 65. Claim 43 was rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement, and under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 45 to 60 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite, and the substitute specification submitted with the "Reply to Office Action Mailed April 10, 2007" was objected to, for using a specified term ("belt") which was considered to be misdescriptive. Claims 33 to 42, 45, 46, 54 to 61 and 63 were rejected under 35 U.S.C. §103(a) as being unpatentable over a proposed combination of U.S. Patent No. 5,902,105 (Uejima et al.) and U.S. Patent No. 5,011,408 (Nakanishi). Claim 43 was rejected under 35 U.S.C. §103(a) as being unpatentable over a proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 4,504,227 (Löhn). Claim 44 was rejected under 35 U.S.C. §103(a) as being unpatentable over a proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 2,263,808 (Hutchinson). Claims 47, 48 and 50 were rejected under 35 U.S.C. §103(a) as

being unpatentable over a proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 1,292,632 (Nemmers). Claims 49 and 51 to 53 were rejected under 35 U.S.C. §103(a) as being unpatentable over a proposed combination of Uejima et al., Nakanishi, Nemmers and U.S. Patent No. 6,227,854 (Helfenbein et al.). Claim 62 was rejected under 35 U.S.C. §103(a) as being unpatentable over a proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 5,575,647 (Grubbs). Claims 64 and 65 were rejected under 35 U.S.C. §103(a) as being unpatentable over a proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 6,149,430 (Nemetz et al.).

A "Reply to Office Action Mailed November 28, 2007" was filed on May 19, 2008, which responded to the final Office Action by canceled claim 43, for removing the rejections under 35 U.S.C. §112, first and second paragraphs, which presented reasons showing that the specified term ("belt") used in claims 45 to 60 was appropriately descriptive, for overcoming the rejection under 35 U.S.C. §112, second paragraph, and which presented argument directed to the rejections of the remaining claims 33 to 42 and 44 to 65 under 35 U.S.C. §103(a).

An Advisory Action was issued on June 12, 2008, which indicated that the Reply filed on May 19, 2008, overcame the rejection of claim 43 under 35 U.S.C. §112, first and second paragraphs, the rejection of claims 45 to 60 under 35 U.S.C. §112, second paragraph, and the objection to the substitute specification submitted with the Reply filed on October 10, 2007.

However, the Advisory Action further stated that the arguments presented in the Reply filed on May 19, 2008, were not persuasive of patentability over the U.S. Patents cited in the Office Action issued on November 28, 2007, and did not place the application in condition for allowance. Nevertheless, the Reply filed on May 19, 2008, was entered for purposes of appeal.

The present appeal was taken by the filing of a "Notice of Appeal" on May 27, 2008, subsequent to filing the "Reply to Office Action Mailed November 28, 2007" and prior to issuance of the Advisory Action issued on June 12, 2008.

REAL PARTY IN INTEREST

The entire right, title and interest in and to the present U.S. Patent Application is currently owned by Micro-Mega International Manufactures, of Besançon, France, by an Assignment from the inventors which was recorded at Reel 18263, Frame 529.

RELATED APPEALS AND INTERFERENCES

(None)

STATUS OF CLAIMS

Original claims 1 to 32 have been canceled, and were replaced with claims 33 to 65 by the "Reply to Office Action Mailed April 10, 2007". Claim 43 has been canceled by the

"Reply to Office Action Mailed November 28, 2007". Claims 33 to 42 and 44 to 65, therefore, remain pending in this application and all stand rejected under 35 U.S.C. §103(a). This appeal is taken from the final rejection of claims 33 to 42 and 44 to 65 under 35 U.S.C. §103(a), as presented in the Office Action issued on November 28, 2007. In accordance with the requirements of 37 C.F.R. §41.37(c)(1)(viii), the claims involved in this appeal are reproduced in the Claims Appendix of this Appeal Brief.

STATUS OF AMENDMENTS

Amendments were filed responsive to the final rejection presented in the Office Action issued on November 28, 2007, in the "Reply to Office Action Mailed November 28, 2007". Such amendments were entered by the Advisory Action issued on June 12, 2008, for purposes of appeal. As a consequence, all presented amendments have been entered.

SUMMARY OF CLAIMED SUBJECT MATTER

The invention which is described and claimed in U.S. Patent Application No. 10/580,373 is generally directed to a dental handpiece having a unitary body and an electrically conductive and elastic connection element. To be noted is that all references to the specification of this patent application by page and line number which follow, in accordance with the

requirements of 37 C.F.R. §41.37(c)(1)(v), are made with reference to the English translation of the specification which was filed when steps were taken to enter the U.S. national stage of International Application No. PCT/FR2004/002392, pursuant to 35 U.S.C. §371.

In summary, a dental handpiece is provided which is comprised of a plurality of mechanical components including a tool-holder assembly for the attachment and for the rotational driving of a dental instrument about a drive axis, and an assembly for the transmission of desired movement (Page 1, lines 28 to 33).

The mechanical components are mounted in the interior of a body having a head and a handle (Page 1, lines 33 to 35). The body is formed from a single piece, forming an envelope, such that one part of the body serves as a handle, and the other part of the body constitutes a head (Page 1, lines 36 to 38). The head includes a first housing which opens out, with at least one opening dimensioned to permit introduction of the component parts of the head and their assembly in the interior of the body, and the handle includes a second longitudinal housing having a rectilinear axis which, on the one hand, opens out at the extremity of the handle via an opening and which, on the other hand, opens out in the first housing via a lateral opening (Page 1, line 38 to Page 2, line 7). The opening at the extremity of the handle is dimensioned to permit introduction of the internal component parts of the handle, and their assembly in the interior

of the handle (Page 2, lines 7 to 10).

In an alternative embodiment, the handpiece includes an electrical connection constituted by a chain of component parts for the mechanical transmission of rotational movement, to assure the transmission of appropriate movement, and for the conduction of electrical energy from a connection provided at the extremity of the handle (for interacting with an external motor) and as far as the instrument (Page 2, lines 11 to 18). In one variation, the electrical connection is constituted by a conducting wire (Page 2, lines 19 to 21). In another variation, the electrical connection is an elastic connection component for providing an electrical connection between the component parts of the mechanical transmission and the head of the tool (Page 2, lines 22 to 26).

The interior housing of the head is preferably adapted to receive a tool-holder assembly comprised of mechanical transmission component parts of the head, and to receive a means for tightening and releasing the tool or the instrument (Page 2, lines 31 to 35). The housing opens out onto the head via an opening that is closable by a stopper or a cap, or by a push-button (Page 2, lines 35 to 38).

The handpiece preferably comprises an arrangement for the attachment of a dental instrument to the tool-holder assembly, for the attachment and rotational driving of a dental tool or instrument about a driving axis (Page 3, lines 1 to 5). The tool-holder assembly is integrated into the head of the

dental handpiece, and is connected to a transmission assembly integrated in the handle of the handpiece (Page 3, lines 5 to 8). The tool-holder assembly is principally comprised of a deformable and elastic tightening and releasing means in the form of a belt (Page 2, lines 9 to 11). At least one part of the belt has a section adapted for engagement in a groove or an annular slot provided in the upper part of the instrument, and is adapted to retain the instrument by tightening on the instrument (Page 3, lines 11 to 15). The tightening and releasing means also includes means for the application of releasing forces for canceling such tightening forces, for the purpose of releasing the instrument, and the foregoing attachment arrangement is preferably detachable from the tool-holder (Page 2, lines 15 to 20).

In one variation, the belt is made of a deformable, elastic material, and exhibits a form that is essentially that of a parallelogram having a central zone which is provided for the purpose of retaining the head of the instrument tightly in place at the level of a slot (Page 3, lines 21 to 25). In another variation, the elastic, deformable belt exhibits the form of a split ring or a split annular clip including an annular shoulder adapted for engagement in an annular slot in the instrument, and a conical part for interacting with a complementary conical part of a push-button (Page 3, lines 26 to 31).

Depending upon the embodiment employed and/or the

operating speed of the tool, the attachment arrangement can include a push-button (Page 3, lines 32 to 34). The push-button may or may not be integral with the tool-holder, and can be retained in an opening in the head, for example, by clipping (Page 3, lines 34 to 37).

U.S. Patent Application No. 10/580,373 contains a single independent claim, claim 33, which recites a plurality of elements in combination. Following is a concise explanation of the subject matter defined in independent claim 33, including an identification of related reference characters shown in the drawings (which have been indicated in parentheses). To avoid duplication, the reference characters are identified where a particular component is first recited, and are not repeated for subsequent recitations of the same component.

A claimed "dental handpiece (1) including mechanical components (recited below) and comprising a tool-holder assembly (24) for attaching and for rotationally driving a dental instrument (5) about a drive axis (6), and an assembly (9, 23) for transmitting rotational movement to the tool-holder assembly" is discussed, for example, at lines 29 to 33 of page 1 of the specification as originally presented.

The "mechanical components are mounted in interior portions of a body (2) having a head (4, 40) and a handle (3), wherein the body is formed as a unitary, electrically insulating envelope (8) including one part which serves as the handle and another part which constitutes the head" as is discussed, for

example, at lines 33 to 38 of page 1 of the specification as originally presented.

The "head includes a first housing (26, 31) having at least one opening (27) dimensioned to permit component parts (20, 24, 28, 55) of the head to be introduced into and assembled within interior portions of the first housing" as is discussed, for example, from line 38 of page 1 to line 3 of page 2 of the specification as originally presented.

The "handle includes a second, longitudinal housing (33) having a longitudinal axis (7), and an opening (81) at an end of the handle opposite to the head which is dimensioned to permit internal component parts (11, 12, 13, 14, 15, 16, 23) of the handle to be introduced into and assembled within interior portions of the second housing, and a lateral opening (32) communicating with the first housing" as is discussed, for example, at lines 3 to 10 of page 2 of the specification as originally presented.

"[E]lectrical current is conducted from a casing (8) associated with the end of the handle opposite to the head, for connection to a drive motor (not shown), to the lateral opening communicating with the first housing by internal component parts of the handle" as is discussed, for example, at lines 11 to 26 of page 2 of the specification as originally presented.

The "head includes a barrel pinion (20) assembled for rotation about the drive axis, wherein the barrel pinion includes teeth (21) operatively coupled with teeth (22) of an

output pinion (23) associated with the internal component parts of the handle, and wherein the barrel pinion is electrically conductive and ensures an electrical connection between the internal component parts of the handle and the dental instrument coupled with the tool-holder assembly" as is discussed, for example, at lines 27 to 34 of page 7 of the specification as originally presented.

U.S. Patent Application No. 10/580,373 also contains dependent claims, including claims 42, 45, 47 and 58, which recite "means plus function" elements. Following is an identification of the structure, material or acts described in the specification as corresponding to such elements, including an identification of related reference characters shown in the drawings (which have been indicated in parentheses). Once again, and to avoid duplication, the reference characters are identified where a particular component is first recited, and are not repeated for subsequent recitations of the same component.

Claims 42 and 58 each recite "means (25) for tightening and releasing the dental instrument". Such means are described, for example, from line 28 of page 10 to line 9 of page 12 of the specification as originally presented, which describes a first alternative embodiment of an elastic belt (25) corresponding to the recited "means for tightening and releasing the dental instrument", and from line 10 of page 12 to line 28 of page 13 of the specification as originally presented, which describes a second alternative embodiment of an elastic belt (25)

corresponding to the recited "means for tightening and releasing the dental instrument".

Claim 45 recites "means (42, 54) for applying releasing forces for releasing the instrument". Such means are described, for example, from line 28 of page 10 to line 9 of page 12 of the specification as originally presented, which describes a first alternative embodiment of an elastic belt (25) having projections (42) corresponding to the recited "means for applying releasing forces for releasing the instrument", and from line 10 of page 12 to line 28 of page 13 of the specification as originally presented, which describes a second alternative embodiment of an elastic belt (25) having ears (54) corresponding to the recited "means for applying releasing forces for releasing the instrument". Alternative embodiment push-buttons (55) for operating the ears (54) of the second alternative embodiment of the elastic belt (25), which are described, for example, from line 6 of page 15 to line 24 of page 16 of the specification as originally presented, which describes a first alternative embodiment push-button (55), and from line 25 of page 16 to line 5 of page 18 of the specification as originally presented, which describes a second alternative embodiment push-button (55), are recited in other claims and, therefore, do not correspond to the recited "means for applying releasing forces for releasing the instrument".

Claim 47 recites projections (42, 54) located in a notch (43, 63) in the head of the dental handpiece, "wherein

the projections form means for manually and directly applying forces for releasing the belt". Such means are described, for example, from line 36 of page 10 to line 35 of page 11 of the specification as originally presented, which describes a first alternative embodiment of an elastic belt having the recited "means (42) for manually and directly applying forces for releasing the belt", and from lines 13 to 29 of page 12 of the specification as originally presented, which describes a second alternative embodiment of an elastic belt having the recited "means (54) for manually and directly applying forces for releasing the belt".

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. Whether applicants' claims 33 to 42, 45, 46, 54 to 61 and 63 are unpatentable under 35 U.S.C. §103(a) over the proposed combination of U.S. Patent No. 5,902,105 (Uejima et al.) and U.S. Patent No. 5,011,408 (Nakanishi).

II. Whether applicants' claim 44 is unpatentable under 35 U.S.C. §103(a) over the proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 2,263,808 (Hutchinson).

III. Whether applicants' claims 47, 48 and 50 are unpatentable under 35 U.S.C. §103(a) over the proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 1,292,632 (Nemmers).

IV. Whether applicants' claims 49 and 51 to 53 are unpatentable under 35 U.S.C. §103(a) over the proposed combination of Uejima et al., Nakanishi, Nemmers and U.S. Patent No. 6,227,854 (Helfenbein et al.).

V. Whether applicants' claim 62 is unpatentable under 35 U.S.C. §103(a) over the proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 5,575,647 (Grubbs).

VI. Whether applicants' claims 64 and 65 are unpatentable under 35 U.S.C. §103(a) over the proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 6,149,430 (Nemetz et al.).

ARGUMENT

I. Applicants have demonstrated that claims 33 to 42, 45, 46, 54 to 61 and 63 patentably distinguish the proposed combination of U.S. Patent No. 5,902,105 (Uejima et al.) and U.S. Patent No. 5,011,408 (Nakanishi) and are not subject to rejection under 35 U.S.C. §103(a).

Claims 33, 34, 38, 41, 42, 46, 58 to 61 and 63

Claims 33 to 42, 45, 46, 54 to 61 and 63 are rejected under 35 U.S.C. §103(a) as being unpatentable over a proposed combination of U.S. Patent No. 5,902,105 (Uejima et al.) and U.S. Patent No. 5,011,408 (Nakanishi). Further to be noted is that claims 44, 47 to 53, 62, 64 and 65 are rejected under 35 U.S.C. §103(a) as being unpatentable over proposed combinations of Uejima et al. and Nakanishi with numerous other U.S. Patents.

As a consequence, all of the formulated rejections of claims are primarily based on a proposed combination of Uejima et al. and Nakanishi. For reasons which follow, it is submitted that the subject matter recited in applicants' claims would not have been obvious to the person of ordinary skill in the art at the time the present invention was made based on the disclosures of Uejima et al. and Nakanishi.

The Office Action of November 28, 2007, correctly stated (at Page 3) that Uejima et al. disclose a dental treatment apparatus having certain electrically conductive components for

performing a root canal length measurement function. The Office Action of November 28, 2007, further correctly stated that "Uejima does not show forming the body as a unitary part" (noting, for example, the disclosure provided from line 54 of column 4 to line 6 of column 5). However, the Office Action of November 28, 2007, incorrectly failed to acknowledge a further distinction between applicants' claims and the handpiece 11 of Uejima et al.

Independent claim 33 recites a dental handpiece "wherein the body is formed as a unitary, electrically insulating envelope including one part which serves as the handle and another part which constitutes the head" (emphasis added). Consequently, the recited body is not only a unitary part, but is a unitary part that forms an "electrically insulating envelope including one part which serves as the handle and another part which constitutes the head". Noting the following, this is to be distinguished from the shank module 13 which comprises the head unit 11B of Uejima et al.

As is best shown in Figures 2 and 3 of Uejima et al., the shank module 13 includes a housing 13c for containing a spring 37 and a bearing member 38 for receiving the intermediate rotation shaft 13b. At lines 64 to 67 of column 5 of Uejima et al., it is specifically indicated that:

> all members relating to the insertion section 12c, the spring 37, the bearing member 38 and the housing 13c are made of metallic materials or other electrically conductive materials. (emphasis added)

At lines 7 to 12 of column 6, it is further indicated that:

> the terminal 18e of the root canal length measurement module 18 is made electrically conductive to the cutting tool 15 installed in the head 14 via electrically conductive materials in the handpiece 11 [so that] no external wiring is necessary for the cutting tool 15. (emphasis added)

Consequently, to provide a handpiece having no external wiring and which is capable of performing a root canal length measurement function using the handpiece, the housing 13c of the handpiece 11 of Uejima et al. is made electrically conductive.

Moreover, noting lines 24 to 26 of column 6 of Uejima et al., the electrically conductive "surface of the housing 13c of the shank module 13 is provided with an insulating film", and this is required so that:

> even if the handpiece 11 makes contact with the tissues in the mouth or the like of the patient during root canal length measurement, the measurement circuit is not affected adversely and it is possible to continue measurement without problems. (col. 6, lines 40 to 44; emphasis added)

Consequently, for the handpiece disclosed by Uejima et al. to work properly, the housing 13c must be made of an electrically conductive material, and the electrically conductive

material must additionally be provided with an insulating film.

This is to be distinguished from the dental handpiece recited in applicants' claim 33, which not only has a unitary body, distinguishing the separate modules forming the handpiece of Uejima et al., but which also has a unitary body forming an electrically insulating envelope including portions constituting the handle and portions constituting the head, distinguishing the required, electrically conductive housing 13c of the handpiece 11 of Uejima et al.

The Office Action of November 28, 2007, proposed a modification of the handpiece of Uejima et al. to include the unitary body which is disclosed by Nakanishi. However, in view of the foregoing, it is submitted that the handpiece disclosed by Nakanishi is not properly combined with the handpiece of Uejima et al., and that even if such a combination is deemed to be proper, the person of ordinary skill in the art at the time the present invention was made would not have known to produce the dental handpiece recited in applicants' claims from a combination of the disclosures of Uejima et al. and Nakanishi.

Firstly, it is to be noted that the disclosure of Nakanishi does not in any way relate to a handpiece which is to be used for performing a root canal length measurement function, and which must, by necessity, include suitable electrically conductive components. Other than a disclosure of materials suitable for forming the elastic engagement member 18a, at lines 10 to 12 of column 3, Nakanishi fails to specify any materials

for forming the various components of the disclosed handpiece.

Consequently, Nakanishi's disclosure would not have provided the person of ordinary skill in the art at the time the present invention was made with any indication of what materials should be used to form the various components disclosed, or that any of the disclosed components should be formed of electrically conductive materials, either for purposes of performing a root canal length measurement function, or otherwise. Accordingly, the person of ordinary skill in the art at the time the present invention was made would not have combined the disclosure of Nakanishi with the disclosure of Uejima et al., as proposed in the Office Action of November 28, 2007.

Secondly, even if the person of ordinary skill in the art at the time the present invention was made would have had reason to consider a combination of the disclosure of Nakanishi with the disclosure of Uejima et al., as was proposed in the Office Action of November 28, 2007, such a combination would have been rejected because a substitution of the unitary head housing 12 and head housing jacket 13 of Nakanishi for the shank module 13 and the head 14 of Uejima et al. would not produce the separate, connectable and disconnectable structures which are described, for example, from line 54 of column 4 to line 6 of column 5 of Uejima et al., and which are required for proper operation of the handpiece 11 of Uejima et al.

Moreover, and as previously indicated, for the handpiece 11 of Uejima et al. to perform a root canal length

measurement function, the housing 13c of the handpiece 11 of Uejima et al. is made electrically conductive. However, noting lines 26 to 29 of column 6 of Uejima et al.:

> The housing 14e of the head 14 can be made of an insulating material such as a synthetic resin, since the housing is not included in any part of the above-mentioned conduction circuit. (emphasis added)

Consequently, the housing 13c of the handpiece 11 of Uejima et al., which is part of the conduction circuit for performing the disclosed root canal length measurement function, is made electrically conductive, while the housing 14e of the handpiece 11, which is not part of the conduction circuit for performing the disclosed root canal length measurement function, is made of an insulating material. This would have been entirely inconsistent with a use of the unitary head housing 12 and head housing jacket 13 disclosed by Nakanishi, because Uejima et al. disclose a handpiece 11 formed of separate, connectable and disconnectable structures, and because the separate structures of the handpiece 11 disclosed by Uejima et al. are provided for performing the disclosed root canal length measurement function.

In view of the foregoing, it is submitted that the person of ordinary skill in the art would not have considered combining the disclosures of Uejima et al. and Nakanishi, but would have instead rejected such a combination as inoperable, and would not have considered modification of the handpiece 11

of Uejima et al. to include the unitary head housing 12 and head housing jacket 13 disclosed by Nakanishi, as is proposed in the Office Action of November 28, 2007, because of structural inconsistencies between the disclosed handpieces.

In the Supreme Court decision of *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007), the Court indicates that it is only when "a person of ordinary skill can implement a predictable variation [that] §103 likely bars... patentability" (*Id.* at 1740, emphasis added). No disclosure in Uejima et al., in Nakanishi, or in the art in general, has been identified which would have allowed the person of ordinary skill in the art to predictably vary the dental apparatus disclosed by Uejima et al. and/or Nakanishi to develop a dental handpiece in accordance with applicants' claims.

In its discussion of the applicability of an "obvious to try" analysis, the *KSR* Decision further indicates that it is only when "there are a finite number of identified, predictable solutions [that] a person of ordinary skill has good reason to pursue the known options within his or her technical grasp". *Id.* at 1742. It is submitted that the disclosures of Uejima et al. and Nakanishi do not provide the finite number of identified, predictable solutions that would have allowed a person of ordinary skill to predict variations of the dental apparatus disclosed by Uejima et al. and Nakanishi which would have produced a dental handpiece in accordance with applicants' claims, and that the person of ordinary skill in the art, at the

time applicants' invention was made, would not have known how to produce a dental instrument in accordance with applicants' claims from the disclosures of Uejima et al. and Nakanishi.

The *KSR* Decision further indicates that "when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious" (citing *United States v. Adams*, 383 U.S. 39, at 51-52, 148 USPQ 479 (1966)). *Id.* at 1740. It is submitted that the above-noted structural inconsistencies between the dental treatment apparatus of Uejima et al. and the dental handpiece of Nakanishi would have taught away from the combination of Uejima et al. and Nakanishi which was proposed in the Office Action of November 28, 2007, further supporting the conclusion that the person of ordinary skill in the art at the time the present invention was made would not have predicted that variation of the dental apparatus disclosed by Uejima et al. and Nakanishi could produce a dental instrument in accordance with applicants' claims.

The *KSR* Decision goes on to indicate that "[a] fact finder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning" (citing *Graham v. John Deere Co.*, 383 U.S. 1, at 36, 148 USPQ 459 (1966)). *Id.* at 1742. It is submitted that the rejection of applicants' claims under 35 U.S.C. §103(a) based on the disclosures of Uejima et al. and Nakanishi is the result of such hindsight reasoning, and was made in error.

Claims 35 to 37, 39 and 40

A. **Dependent claim 35** recites an electrically conductive chain of component parts located inside the handle of the dental handpiece. Uejima et al. disclose an electrically conductive chain of component parts located inside the handle of the dental treatment apparatus. The disclosed chain of component parts does not, however, include a first spring having a first end coupled with the external race of a first bearing and a second, opposite end coupled with a fixed external race of a second bearing, a ring coupled with the external race of the second bearing and retained axially on a first shoulder of the envelope containing the chain of component parts, or a second spring coupled with the ring and axially retained by a second shoulder of the envelope, as is recited in applicants' dependent claim 35. Nakanishi fails to disclose any electrically conductive component parts located inside the handle of the dental handpiece.

B. **Dependent claim 36** recites additional electrically conductive component parts located inside the handle of the dental handpiece. Once again, Uejima et al. fail to disclose a first spring and a second spring which are compression springs having coils external to the transmission shaft, as is recited in applicants' dependent claim 36, and Nakanishi fails to disclose any electrically conductive component parts located inside the handle of the dental handpiece.

C. **Dependent claim 37** recites additional electrically conductive component parts located inside the handle (and head)

of the dental handpiece. Once again, Uejima et al. fail to disclose an upper bearing having an external race coupled with the second spring of the handle and a lower bearing having an elastic washer for taking up axial play in the bearings, and a barrel pinion mounted on a drive shaft which is integral with interior races of the ball bearings, as is recited in applicants' dependent claim 37, and Nakanishi fails to disclose any electrically conductive component parts located inside the handle of the dental handpiece.

D. **Dependent claim 39** recites an additional electrically conductive component part located inside the handle of the dental handpiece. Once again, Uejima et al. fail to disclose an elastic connection device for conducting electrical current from the internal component parts of the handle to the component parts of the head, as is recited in applicants' dependent claim 39, and Nakanishi fails to disclose any electrically conductive component parts located inside the handle of the dental handpiece.

E. **Dependent claim 40** recites additional electrically conductive component parts located inside the handle of the dental handpiece. Once again, Uejima et al. fail to disclose a first peripheral segment engaged in a groove formed in the race of the second bearing, and a second peripheral segment opposite to the first peripheral segment which is supported against head portions of the dental instrument, as is recited in applicants' dependent claim 40, and Nakanishi fails to disclose any electrically conductive component parts located

inside the handle of the dental handpiece.

The position is taken at Page 3 of the Office Action of November 28, 2007, that "the specific metal parts that are used to conduct electricity would be an obvious matter of choice to one of ordinary skill in the art in using the desired path within the body for the electricity to take". Nothing, however, either in Uejima et al., in Nakanishi, or in the general state of the art at the time the present invention was made, has been shown which would have fairly allowed the person of ordinary skill at the time the present invention was made to predict variations of the dental apparatus disclosed by Uejima et al. and Nakanishi which would have produced a dental handpiece in accordance with applicants' claims. As a consequence, the person of ordinary skill in the art, at the time applicants' invention was made, would not have known how to produce a dental instrument in accordance with applicants' claims from the disclosures of Uejima et al. and Nakanishi.

Claims 45 and 54 to 57

A. **Dependent claim 45** recites an attachment for connecting a dental instrument to the tool-holder assembly of the dental handpiece. Uejima et al. and Nakanishi also disclose attachments for connecting a dental instrument to the tool-holder assembly of a dental treatment apparatus. The disclosed attachments of Uejima et al. and Nakanishi do not, however, include a deformable and elastic belt for tightening upon and releasing the dental

instrument, at least one part of which has a section for engaging an aperture provided in upper portions of the dental instrument, as is recited in applicants' dependent claim 45.

The position is taken at Page 3 of the Office Action of November 28, 2007, that "Nakanishi shows using an elastic element (belt) 18a". Noting Nakanishi, however, from line 66 of column 2 to line 56 of column 3, the elastic element 18a engages the "connecting-removal unit 18" which is removably associated with the head housing 12 of the dental handpiece, unlike the elastic belt of applicants' attachment, which engages an aperture provided in upper portions of the head.

B. **Dependent claim 54** recites an attachment for connecting a dental instrument to the tool-holder assembly of the dental handpiece having a split structure for engaging the dental instrument. Noting line 2 of column 3 of Nakanishi, the disclosed elastic member 18a is said to be in the form of a "split ring". Nakanishi, however, fails to disclose a split structure having a conical part for interacting with a complementary conical part of a push-button, as is recited in applicants' dependent claim 54.

C. **Dependent claims 55 to 57** recite an attachment for connecting a dental instrument to the tool-holder assembly of the dental handpiece having a split ring.

1. **Claim 55:** Nakanishi, however, fails to disclose a split ring including a conical part provided on an undersurface of the split ring for receiving the dental instrument, as is

recited in applicants' dependent claim 55.

2. Claim 56: Nakanishi further fails to disclose a push-button coupled with the split ring which is axially guided by at least one sector arranged on the undersurface of the push-button and which is terminated by a conical extremity, as is recited in dependent claim 56.

3. Claim 57: Moreover, Nakanishi fails to disclose a push-button coupled with the split ring having elastic blades cut into a cap of the push-button and terminated by clipping slots and a conical base, as is recited in dependent claim 57.

Once again, nothing in Uejima et al., in Nakanishi, or in the general state of the art at the time the present invention was made would have fairly allowed the person of ordinary skill to predict variations of the dental apparatus disclosed by Uejima et al. and Nakanishi which would have produced a dental handpiece in accordance with applicants' claims. As a consequence, the person of ordinary skill in the art, at the time applicants' invention was made, would not have known how to produce a dental instrument in accordance with applicants' claims from the disclosures of Uejima et al. and Nakanishi.

II. Claim 44 patentably distinguishes the proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 2,263,808 (Hutchinson) and is not subject to rejection under 35 U.S.C. §103(a).

Dependent claim 44 recites a dental handpiece having a head which includes a cavity for containing a solid grease that is released on each use from a separating wall between the cavity and the barrel pinion, through an orifice, for lubricating the barrel pinion.

It is first noted that Hutchinson does not disclose the several features that have previously been referred to which distinguish applicants' claims from the disclosures of Uejima et al. and Nakanishi. Consequently, Hutchinson's disclosure does not diminish the patentability of applicants' claims, including dependent claim 44.

It is further noted that while Hutchinson discloses a dental hand piece having a cavity associated with the head (H) of the hand piece which can receive a lubricating grease (noting lines 29 to 73 of the right-side column on page 2), the grease is not released from a separating wall located between the shell 1 and the spindle 7 which receives the dental instrument, through an orifice, as is recited in applicants' dependent claim 44.

Consequently, nothing in Uejima et al., Nakanishi or Hutchinson would have fairly allowed the person of ordinary skill in the art at the time the present invention was made to predict

variations of the dental apparatus disclosed by Uejima et al., Nakanishi and Hutchinson which would have produced a dental handpiece in accordance with applicants' claim 44, and the person of ordinary skill in the art, at the time applicants' invention was made, would not have known how to produce a dental instrument in accordance with applicants' claim 44 from the disclosures of Uejima et al., Nakanishi and Hutchinson.

III. Claims 47, 48 and 50 patentably distinguish the proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 1,292,632 (Nemmers) and are not subject to rejection under 35 U.S.C. §103(a).

A. Dependent claims 47, 48 and 50 are directed to a dental handpiece having a belt for tightening upon and releasing a dental instrument fixed to the handpiece.

It is first noted that Nemmers does not disclose the several features that have previously been referred to which distinguish applicants' claims from the disclosures of Uejima et al. and Nakanishi. Consequently, Nemmers' disclosure does not diminish the patentability of applicants' claims, including dependent claims 47, 48 and 50.

It is further noted that the position has been taken, in the Paragraph connecting Pages 4 and 5 of the Office Action of November 28, 2007, that "Nemmers shows a notch and two extremities D, C5 that can by (sic) used by applying manual

forces for releasing the element (belt)". Irrespective of what may or may not be shown by Nemmers, no structure corresponding to applicants' belt has been identified, and the various structures referred to are not associated with a belt for tightening upon and releasing a dental instrument fixed to the handpiece, as is recited in applicants' dependent claims 47, 48 and 50. Nemmers also fails to disclose the following elements of applicants' dependent claims 47, 48 and 50.

1. **Claim 47:** Nemmers fails to disclose a belt which forms a parallelogram having a central zone for retaining a head of the dental instrument in place at the level of the aperture, wherein the parallelogram has a large diagonal including two extremities extending diametrically beyond an envelope defined by the head as two projections, wherein each of the projections is located in a notch in the head, and wherein the projections form means for manually and directly applying forces for releasing the belt, as is recited in dependent claim 47.

2. **Claim 48:** Nemmers fails to disclose a belt which includes detachments in proximity to the projections, wherein the detachments rest on peripheral portions of the housing of the head, as is recited in dependent claim 48.

3. **Claim 50:** Nemmers fails to disclose a belt which further includes two ears forming projections perpendicular to a plane defined by the belt and situated on the same side of the defined plane, wherein the ears apply tightening forces in cooperation with the barrel pinion, as is recited in dependent

claim 50.

Consequently, it is submitted that Nemmers is not appropriately cited against applicants' claims 47, 48 and 50. Moreover, and in the event that a citation to Nemmers is deemed to be appropriate, nothing in Uejima et al., Nakanishi or Nemmers would have fairly allowed the person of ordinary skill in the art at the time the present invention was made to predict variations of the dental apparatus disclosed by Uejima et al., Nakanishi and Nemmers which would have produced a dental handpiece in accordance with applicants' claims 47, 48 and 50, and the person of ordinary skill in the art, at the time applicants' invention was made, would not have known how to produce a dental instrument in accordance with applicants' claims 47, 48 and 50 from the disclosures of Uejima et al., Nakanishi and Nemmers.

IV. Claims 49 and 51 to 53 patentably distinguish the proposed combination of Uejima et al., Nakanishi, Nemmers and U.S. Patent No. 6,227,854 (Helfenbein et al.) and are not subject to rejection under 35 U.S.C. §103(a).

A. Dependent claims 49 and 51 to 53 are further directed to the belt for tightening upon and releasing a dental instrument fixed to the handpiece.

It is first noted that Helfenbein et al. do not disclose the several features that have previously been referred to which distinguish applicants' claims from the disclosures

of Uejima et al., Nakanishi and Nemmers. Consequently, the disclosure of Helfenbein et al. does not diminish the patentability of applicants' claims, including dependent claims 49 and 51 to 53.

It is further noted that the position has been taken, at Page 5 of the Office Action of November 28, 2007, that "Helfenbein teaches using a conical part 13". Even if the annular projection 13 of Helfenbein et al. is considered to constitute a conical part, the disclosed annular projection 13 forms part of the push button 11 of the disclosed chucking device, and does not form part of a belt, or any other structure for tightening upon and releasing a dental instrument fixed to a handpiece, as is recited in applicants' dependent claims 49 and 51 to 53. Helfenbein et al. also fail to disclose the following elements of applicants' dependent claims 49 and 51 to 53.

1. **Claim 49**: Helfenbein et al. fail to disclose a belt which includes a conical part located on an undersurface of the central zone of the belt, as is recited in dependent claim 49.

2. **Claim 51**: Helfenbein et al. fail to disclose a belt having ears which include conical flanges, as is recited in dependent claim 51.

3. **Claim 52**: Helfenbein et al. fail to disclose an attachment for connecting a dental instrument to a tool-holder assembly which further includes a push-button having an intermediate elastic zone which operates as a return spring for the push-button (instead, a return spring 12 is provided

for this), and an internal cylindrical insert which operates to deform a belt for tightening upon and releasing a dental instrument when the push-button is pressed, as is recited in dependent claim 52.

4. Claim 53: Helfenbein et al. fail to disclose an internal cylindrical insert which operates to deform a belt for tightening upon and releasing a dental instrument when the push-button is pressed having an internal conical form which interacts with complementary conical flanges on the ears of the belt, as is recited in dependent claim 53.

Consequently, it is submitted that nothing in Uejima et al., Nakanishi, Nemmers or Helfenbein et al. would have fairly allowed the person of ordinary skill in the art at the time the present invention was made to predict variations of the dental apparatus disclosed by Uejima et al., Nakanishi, Nemmers and Helfenbein et al. which would have produced a dental handpiece in accordance with applicants' claim 49 and 51 to 53, and the person of ordinary skill in the art, at the time applicants' invention was made, would not have known how to produce a dental instrument in accordance with applicants' claims 49 and 51 to 53 from the disclosures of Uejima et al., Nakanishi, Nemmers and Helfenbein et al.

V. Claim 62 patentably distinguishes the proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 5,575,647 (Grubbs) and is not subject to rejection under 35 U.S.C. §103(a).

Dependent claim 62 recites a dental handpiece wherein the drive axis of the head and the longitudinal axis of the handle form an angle between 100° and 130°.

It is noted, however, that Grubbs does not disclose the several features that have previously been referred to which distinguish applicants' claims from the disclosures of Uejima et al. and Nakanishi. Consequently, Grubbs' disclosure does not diminish the patentability of applicants' claims, including dependent claim 62, which depends from claims 33 and 61.

Consequently, nothing in Uejima et al., Nakanishi or Grubbs would have fairly allowed the person of ordinary skill in the art at the time the present invention was made to predict variations of the dental apparatus disclosed by Uejima et al., Nakanishi and Grubbs which would have produced a dental handpiece in accordance with applicants' claims, and the person of ordinary skill in the art, at the time applicants' invention was made, would not have known how to produce a dental instrument in accordance with applicants' claims from the disclosures of Uejima et al., Nakanishi and Grubbs.

VI. Claims 64 and 65 patentably distinguish the proposed combination of Uejima et al., Nakanishi and U.S. Patent No. 6,149,430 (Nemetz et al.) and are not subject to rejection under 35 U.S.C. §103(a).

A. Dependent claims 64 and 65 are further directed to formation of the envelope of the dental handpiece of a polymer material, and more particularly, PEEK.

It is first noted that Nemetz et al. do not disclose the several features that have previously been referred to which distinguish applicants' claims from the disclosures of Uejima et al. and Nakanishi. Consequently, the disclosure of Nemetz et al. does not diminish the patentability of applicants' claims, including dependent claims 64 and 65.

Claim 65: It is further noted that although the position has been taken, at Page 6 of the Office Action of November 28, 2007, that "Nemetz teaches forming a handpiece by molding a polymer", there is no indication that Nemetz et al. disclose PEEK as the polymer material. Rather, it is indicated that "[i]t would be obvious to one of ordinary skill in the art to modify the... combination to include a handpiece made by molding PEEK material".

As has previously been discussed, in its discussion of the applicability of an "obvious to try" analysis, the *KSR* Decision indicates that it is only when "there are a finite number of identified, predictable solutions [that] a person of

ordinary skill has good reason to pursue the known options within his or her technical grasp". *Id.* at 1742. It is submitted that the disclosure of Nemetz et al. does not provide the requisite finite number of identified, predictable solutions that would have allowed a person of ordinary skill to predict variations of the dental apparatus disclosed by Uejima et al., Nakanishi and Nemetz et al. which would have produced a dental handpiece in accordance with applicants' claims, and that the person of ordinary skill in the art, at the time applicants' invention was made, would not have known how to produce a dental instrument in accordance with applicants' claims from the disclosures of Uejima et al., Nakanishi and Nemetz et al.

CONCLUSION

It has been demonstrated that there are significant differences between the dental handpiece recited in applicants' claims 33 to 42 and 44 to 65 and the various devices disclosed by Uejima et al., Nakanishi, Hutchinson, Nemmers, Helfenbein et al., Grubbs and Nemetz et al., differences that would not have been suggested to the person of ordinary skill in the art at the time the present invention was made.

Consequently, it has been demonstrated that claims 33 to 42 and 44 to 65 would not have been obvious to the person of ordinary skill in the art at the time the present invention was made based on the disclosures of Uejima et al., Nakanishi, Hutchinson, Nemmers, Helfenbein et al., Grubbs and Nemetz et al., and that the rejections of claims 33 to 42 and 44 to 65 under 35 U.S.C. §103(a) based on the proposed combinations of Uejima et al., Nakanishi, Hutchinson, Nemmers, Helfenbein et al., Grubbs and Nemetz et al. have been made in error and are properly withdrawn.

Consequently, it has been shown that the present U.S. Patent Application, No. 10/580,373, is in condition for allowance and that a reversal of the final rejection presented in the Office Action of November 28, 2007, is appropriate.

CLAIMS APPENDIX

Following are the claims presently pending in this patent application:

33. A dental handpiece including mechanical components and comprising a tool-holder assembly for attaching and for rotationally driving a dental instrument about a drive axis, and an assembly for transmitting rotational movement to the tool-holder assembly;

wherein the mechanical components are mounted in interior portions of a body having a head and a handle, wherein the body is formed as a unitary, electrically insulating envelope including one part which serves as the handle and another part which constitutes the head;

wherein the head includes a first housing having at least one opening dimensioned to permit component parts of the head to be introduced into and assembled within interior portions of the first housing;

wherein the handle includes a second, longitudinal housing having a longitudinal axis, and an opening at an end of the handle opposite to the head which is dimensioned to permit internal component parts of the handle to be introduced into and assembled within interior portions of the second housing, and a lateral opening communicating with the first housing;

wherein electrical current is conducted from a casing

associated with the end of the handle opposite to the head, for connection to a drive motor, to the lateral opening communicating with the first housing by internal component parts of the handle; and

wherein the head includes a barrel pinion assembled for rotation about the drive axis, wherein the barrel pinion includes teeth operatively coupled with teeth of an output pinion associated with the internal component parts of the handle, and wherein the barrel pinion is electrically conductive and ensures an electrical connection between the internal component parts of the handle and the dental instrument coupled with the tool-holder assembly.

34. The dental handpiece of claim 33 wherein the electrical current is conducted from the end of the handle opposite to the head to the lateral opening communicating with the first housing by an electrical connection comprised of a chain of component parts for the mechanical transmission of rotational movement to the tool-holder assembly.

35. The dental handpiece of claim 34 wherein the chain of component parts is located inside the handle and include a socket coupled with the end of the handle opposite to the head, a fixed external race of a first bearing coupled with the socket, a first spring having a first end coupled with the external race of the first bearing and a second, opposite end coupled with a

fixed external race of a second bearing, a ring coupled with the external race of the second bearing and retained axially on a first shoulder of the envelope, and a second spring coupled with the ring and axially retained by a second shoulder of the envelope.

36. The dental handpiece of claim 35 wherein the first bearing and the second bearing support a transmission shaft along the longitudinal axis of the handle, and wherein the first spring and the second spring are compression springs having coils external to the transmission shaft.

37. The dental handpiece of claim 35 wherein the head supports two ball bearings having axes aligned with the drive axis, including an upper bearing having an external race coupled with the second spring of the handle and a lower bearing having an elastic washer for taking up axial play in the bearings, wherein the barrel pinion is mounted on a drive shaft, and wherein the barrel pinion is integral with interior races of the two ball bearings, for conducting electricity to and rotationally driving the dental instrument.

38. The dental handpiece of claim 37 wherein the electrical current is conducted from the end of the handle opposite to the head to the dental instrument by the chain of component parts.

39. The dental handpiece of claim 35 wherein the electrical current is conducted from the internal component parts of the handle to the component parts of the head by an elastic connection device.

40. The dental handpiece of claim 39 wherein the elastic connection device includes a first peripheral segment engaged in a groove formed in the race of the second bearing, and a second peripheral segment, opposite to the first peripheral segment, which is supported against head portions of the dental instrument.

41. The dental handpiece of claim 33 wherein the electrical current is conducted from the end of the handle opposite to the head to the lateral opening communicating with the first housing by an electrical connection comprised of a conducting wire.

42. The dental handpiece of claim 33 wherein the first housing receives the tool-holder assembly, and means for tightening and releasing the dental instrument.

44. The dental handpiece of claim 33 wherein the head includes a cavity for containing a solid grease that is released on each use from a separating wall between the cavity and the barrel pinion, through an orifice, for lubricating the barrel

pinion.

45. The dental handpiece of claim 33 which further includes an attachment for connecting a dental instrument to the tool-holder assembly, wherein the attachment includes a deformable and elastic belt for tightening upon and releasing the dental instrument, wherein at least one part of the belt has a section for engaging an aperture provided in upper portions of the dental instrument, and means for applying releasing forces for releasing the instrument.

46. The dental handpiece of claim 45 wherein the attachment is detachably associated with the tool-holder assembly.

47. The dental handpiece of claim 45 wherein the belt forms a parallelogram having a central zone for retaining a head of the dental instrument in place at the level of the aperture, wherein the parallelogram has a large diagonal including two extremities extending diametrically beyond an envelope defined by the head as two projections, wherein each of the projections is located in a notch in the head, and wherein the projections form means for manually and directly applying forces for releasing the belt.

48. The dental handpiece of claim 47 wherein the belt

includes detachments in proximity to the projections, and wherein the detachments rest on peripheral portions of the housing of the head.

49. The dental handpiece of claim 47 wherein the belt further includes a conical part located on an undersurface of the central zone.

50. The dental handpiece of claim 47 wherein the belt further includes two ears forming projections perpendicular to a plane defined by the belt and situated on the same side of the defined plane, and wherein the ears apply tightening forces in cooperation with the barrel pinion.

51. The dental handpiece of claim 50 wherein the ears include conical flanges.

52. The dental handpiece of claim 50 wherein the attachment further includes a push-button having an elastic ring at a lower extremity, for retaining the push-button on the head, an intermediate elastic zone which operates as a return spring for the push-button, and an internal cylindrical insert for deforming the belt and for releasing the tool when the push-button is pressed.

53. The dental handpiece of claim 52 wherein the

cylindrical insert has an internal conical form for interacting with complementary conical flanges on the ears of the belt.

54. The dental handpiece of claim 45 wherein the belt has a split structure including an annular shoulder for engaging an annular slot in the dental instrument, and a conical part for interacting with a complementary conical part of a push-button.

55. The dental handpiece of claim 54 wherein the split structure is a split ring including a conical part provided on an undersurface of the split ring for receiving the dental instrument.

56. The dental handpiece of claim 55 wherein the push-button is axially guided by at least one sector arranged on the undersurface and terminated by a conical extremity.

57. The dental handpiece of claim 55 wherein the push-button has elastic blades cut into a cap of the push-button and terminated by clipping slots and a conical base.

58. The dental handpiece of claim 45 wherein the attachment further includes a push-button for applying releasing forces on means for tightening and releasing of the dental instrument.

59. The dental handpiece of claim 58 wherein the push-button is integral with the tool-holder assembly.

60. The dental handpiece of claim 58 wherein the push-button is retained by a clip located in an opening in the head.

61. The dental handpiece of claim 33 wherein the drive axis of the head and the longitudinal axis of the handle form an angle for producing a contra-angle handpiece.

62. The dental handpiece of claim 61 wherein the angle is between 100° and 130°.

63. The dental handpiece of claim 33 wherein the envelope is a molded part.

64. The dental handpiece of claim 63 wherein the envelope is formed of a polymer material.

65. The dental handpiece of claim 64 wherein the polymer material is PEEK.

EVIDENCE APPENDIX

(None)

RELATED PROCEEDINGS APPENDIX

(None)

Respectfully submitted,

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